

REMARKS

Claims 1-18 have previously canceled, claims 20, 35 and 37 are currently canceled, claims 39 and 40 are currently amended. Claims 42-44 are currently added to further define the scope of the claimed invention. Thus, claims 19, 21-34, 36, 38-44 are currently pending.

Claims 19-41 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Burgel in view of Tanaka or Masumoto. In addition, claims 19-31 and 34-41 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Yoshinari in view of Tanaka or Masumoto.

Response to Rejections Under 35 U.S.C. §103(a)

With respect to the rejection of independent claims 19, 23, 38 and 39 over Burgel in view of Tanaka or Masumoto, the Examiner has acknowledged that Burgel does not disclose that “the precipitation strengthened by the addition of 50 ppm of a strength promoter from the group consisting of zinc, tin, lead, gallium, selenium and arsenic.” The Examiner cites Tanaka as disclosing a hard faced nickel base alloy comprising 0.1 to 3% by weight of tin and/or 0.1 to 3% by weight of tantalum. In addition, the Examiner cites Masumoto as teaching a wear-resistant alloy of high permeability having 0.5% of tin. The Examiner further acknowledges that Tanaka and Masumoto do not teach the exact same proportions as recited in the pending claims. Accordingly, the Examiner argues that it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the addition of 50 ppm to 2000 ppm (0.005-0.2 wt%) of the strength promoter from the group consisting of zinc, tin, lead, gallium, selenium and arsenic, because the proportions taught by Tanaka and Masumoto overlap the claimed proportions for the purpose of providing additional strength to the blade.

However, the proportions of tin and tantalum as described in Tanaka, contrary to the Examiner’s permission, are not included for the purpose of providing additional strength to the blade. In addition, the art or technology involved in Masumoto has nothing to do with high-temperature-resistant components such as gas turbine components, made from an alloy, in particular, from a nickel-base, cobalt base or iron base super alloy with precipitations.

The Examiner’s attention is directed to Tanaka, column 7, lines 1-20, in which Tanaka discusses the addition of either or both of tin and tantalum to increase the corrosion resistance of the alloys without deteriorating the high toughness and ductility thereof. Indeed, Tanaka

discloses that if the amount of tin is over 3% by weight there is an appreciable effect in improving corrosion, but the impact value is greatly reduced with the result in deterioration of the hardness and ductility. Accordingly, Tanaka teaches away from adding tin as a strength promoter as claimed in the subject application. Furthermore, as explained above, the tantalum and tin are added as corrosion resistant components and are not added as strength promoters as required in the claims. Nor does Tanaka disclose, or remotely suggest, a super alloy is precipitation strengthened by the addition of a strength promoter. Moreover, Tanaka discloses that less than 1% of tin by weight provides no improvement. Thus, there would be no motivation to include tin in amounts of less than 1% let alone in the range of .01% and .05% as claimed in claims 26 and claim 39.

Masumoto describes a wear-resistant alloy of high permeability. As set forth in column 1, lines 20-26, Masumoto describes prior art relating to magnetic record play-back heads of tape recorders and the like are operated in AC magnetic fields so that magnetic alloys are required to have high effective permeability and a high frequency magnetic field in good wear-resistant property because of the contact with sliding magnetic tapes. Accordingly, Masumoto has absolutely nothing to do with super alloys or strengthening promoters for parts or components such as turbine blades that are subject to mechanical stresses and operating conditions that are far more different and extreme than play-back heads for tape recorders. Accordingly, one skilled in the art would not look to or consider Masumoto as prior art. In view of the foregoing, the Examiner has failed to set forth a *prima facie* case of obviousness as to independent claims 19, 23, 38 and 39 based on the Burgel, Tanaka or Masumoto references.

With respect to the rejection of claims 19, 23, 38 and 39 set forth on page 6 and 7 of the Office Action, similar to the Burgel reference, the Examiner acknowledges that Yoshinari does not disclose a super alloy that is precipitation strengthened by the addition of 50 to 2000 ppm up to 1100 ppm and other claimed concentrations of the strength promoter selected from a group consisting of zinc, tin, lead, gallium, selenium and arsenic. The Examiner has applied Masumoto and Tanaka to Yoshinari as in the above-rejection based on Burgel. Applicant submits that the above arguments relating to Tanaka and Masumoto apply equally to their combination with Yoshinari; therefore, the Examiner has failed to set forth a *prima facie* case of obviousness relative to the combination of these references with Yoshinari.

Conclusion

For the foregoing reasons, it is respectfully submitted that the objections and rejections set forth in the outstanding Office Action are inapplicable to the present claims. All correspondence should continue to be directed to our below-listed address. Accordingly, Applicant respectfully requests that the Examiner reconsider the objections and rejections and timely pass the application to allowance. Please grant any extensions of time required to enter this paper. The commissioner is hereby authorized to charge any appropriate fees due in connection with this paper, including fees for additional claims and terminal disclaimer fee, or credit any overpayments to Deposit Account No. 19-2179.

Respectfully submitted,

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